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(54) Container having means for gripping the contents

(57) A container (10) e.g. for a compact disc comprises two casing parts (12, 14) relatively movable between a closed position wherein the parts encase the article, and an open position wherein the parts permit access to the article, the first part having resilient gripping means (21, 23, 25) and the second part having pressure means (31, 33, 35) adapted to press against the gripping means (21, 23, 25) so as to maintain the gripping means in an article gripping position thereof when the container is closed.

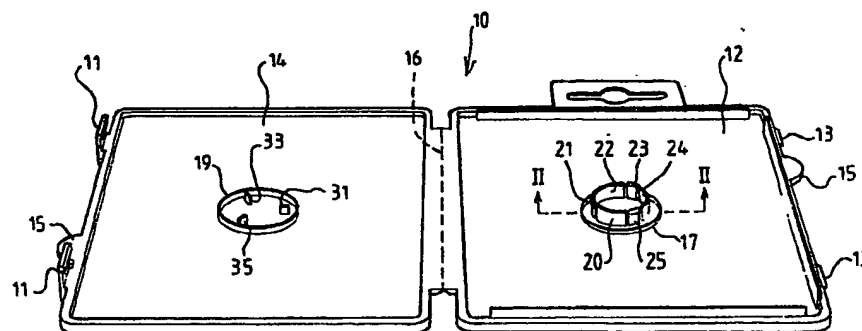


FIG 1

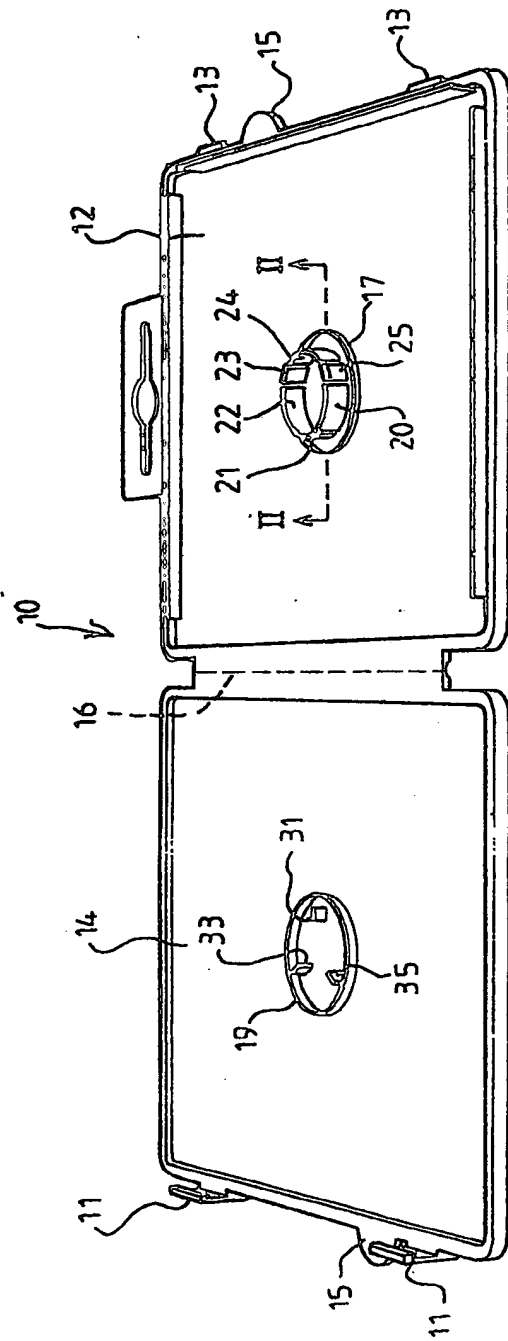


FIG. 1

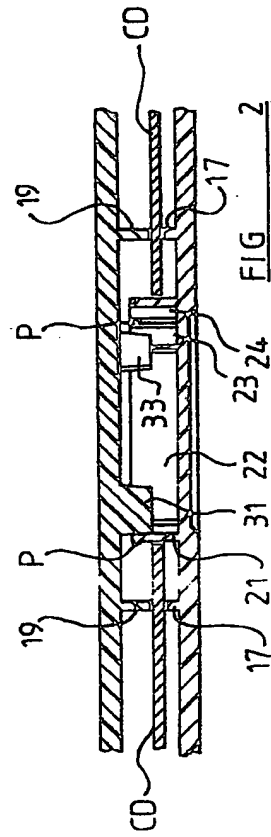


FIG. 2

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Title: "Container"

Description of Invention

This invention relates to a container for an article.

It is an object of the invention to prevent an article from accidentally falling out of a container when the container is opened.

According to the invention there is provided a container for an article, the container comprising two casing parts relatively movable between a closed position wherein the parts encase the article, and an open position wherein the parts permit access to the article, one of the parts having resilient gripping means adapted to grip an article placed in the container, and the other of the parts having pressure means adapted to press against the gripping means, so as to maintain the gripping means in an article gripping position thereof, during the period when the container is closed.

In this manner, gradual flexure of the gripping means away from its article gripping position, such as may otherwise occur over prolonged periods, is avoided, so that the article will be safely retained in the container when the container is opened, and will not fall out of the container accidentally.

One preferred embodiment of the invention will now be described, by way of example only by reference to the accompanying drawings, in which:

FIGURE 1 is a perspective elevational view of a container, in this example a container for a "compact disc", with casing parts thereof in an open position; and

FIGURE 2 is a cross-sectional view, to an enlarged scale, on the line II-II of Figure 1, showing cooperation between the casing parts in a closed position of the

container, and cooperation of said parts with a hub portion of a compact disc.

Referring to the drawings, a compact disc container 10 in accordance with the present invention comprises a first casing part 12 and a second casing part 14, the parts 12 and 14 being moulded in one piece from plastics material and being joined by an integrally formed "crease hinge" 16. In Figure 1 the parts 12 and 14 are shown in their open position, but they may be moved angularly, about the hinge 16, to a closed position, in which peripheral clip formations 11 and 13 thereon snap releasably into engagement, so as to encase the compact disc, in this example an audio compact disc CD (shown only in Figure 2), in "clam-shell" manner. The closed container 10 may subsequently be opened by a user by urging tabs 15 in opposite directions.

The container 10 is formed from polypropylene or any other suitable plastics material having the required characteristics. In the case of polypropylene, the particular advantages of polypropylene are that it is relatively inexpensive, it is wear resistant, it will readily accept printing on its surface, particularly important on the outer surface, and it permits the integral crease-hinge 16 to be provided.

Each of the parts 12 and 14 is provided, at least substantially centrally thereof, with formations adapted to cooperate with the compact disc, particularly with a hub portion of the compact disc, in order to define and maintain the position of the compact disc within the closed container 10.

Said formations include respective annular walls 17 and 19 on the parts 12 and 14 adapted to engage lower and upper faces, respectively, of the hub portion of the compact disc CD. The formations on the part 12 further comprise disposed in a circular/cylindrical arrangement or

configuration, three relatively (compared with wall 17) vertically extensive upstanding arcuate walls 20, 22, 24, and intermediate said walls, three similarly upstanding gripping formations 21, 23, 25, each of which is provided with a respective small radially outwardly extending protrusion P at or near its upper extremity. The slotted cylinder afforded by said arcuate walls 20, 22, 24 and gripping formations 21, 23, 25 is adapted to be received in, and pass part-way through, a circular aperture provided in the hub of the compact disc, the outer diameter of the arcuate walls being equal in diameter to said aperture but the extreme outer diameter of the gripping formations, across said protrusions P, being greater than said diameter. The gripping formations, by virtue of being formed from polypropylene, integrally with the part 12, are resilient.

In order to store the compact disc in the container 10, the container 10 is opened and the compact disc is placed centrally on the part 12, with the hub aperture in concentric alignment with the arcuate walls and gripping formations, and the compact disc is then push-fitted, via its hub, over said arcuate walls and gripping formations, which walls and formations are received in said central aperture, the arcuate walls being so received with a sliding fit, and the resilient formations being so received with a snap-fit action. With regard to said snap-fit action, it will be appreciated that at the commencement of such push-fitting, the inner periphery of the compact disc hub, by engagement with the protrusions P, is effective to deflect the gripping formations radially inwards, to enable the hub to pass said protrusions P, and that when the hub has passed the protrusions P, the gripping formations return resiliently substantially to their original positions in which the protrusions P, by virtue of now

overlying the hub of the compact disc, are thus effective to retain the compact disc on the part 12.

On the other hand, in order to remove the compact disc from the part 12, a user need simply take hold of the disc by its outer periphery and apply sufficient force to lift it from engagement with the gripping formations and arcuate walls, the gripping formations being deflected radially inwardly by the hub as it passes the protrusions P during such removal, but returning resiliently essentially to their original positions when such removal of the disc has been completed.

Whilst the gripping formations may operate satisfactorily in the above manner for a short period after manufacture, in the absence of further technical features in accordance with the present invention, difficulties will however generally be experienced later because, although polypropylene is an ideal material in other respects, over a prolonged period, particularly over a prolonged period in which a compact disc is held on the part 12, the gripping formations may undergo a plastic deformation, away from their initial natural gripping positions, to relatively radially inward positions in which the disc-retaining ability of said protrusions P is reduced, so that there is then a substantial risk that the compact disc will accidentally fall out of the container when the container is opened.

In order to overcome this problem, in accordance with the present invention the part 14 has formed thereon a plurality of upstanding protrusions 31,33,35, one for each of the gripping formations 21,23,25 on the part 12, positioned so as to lie directly radially inwardly of, and bear radially outwardly upon, the respective gripping formations when the container 10 is closed. Thus, when the container is closed, said protrusions on the part 14 are

effective to maintain the gripping formations in their disc-gripping positions, so that the aforesaid plastic deformation of the gripping formations, away from said positions, simply has no opportunity to occur. Thus, when the container 10 in accordance with the invention is opened, there is to all intents and purposes no risk that the disc stored therein will accidentally fall from the part 12.

This is particularly important with regard to storage of discs over a prolonged period, either in the home environment, in transit, or in shops or warehouses prior to sale.

Each of the protrusions 31, 33, 35 is in the form of a respective generally rectangular, and radially orientated, upstanding wall the radial dimension of which is sufficient to ensure that in use there is no significant distortion thereof in a radial direction. Each of said walls affording the protrusions 31, 33, 35 has rounded extremities and is slightly tapered (see Figure 2) to facilitate closure of the container and to enable the protrusions 31, 33, 35 to urge the formations 21, 23, 25 radially outwardly with a camming, wedging action.

It will be appreciated that although the invention has been described with particular reference to a compact disc container, the invention in its broadest terms is applicable to containers for other articles, including containers in which gripping means acts upon an outer peripheral border of an article, rather than upon an aperture in an article.

The features disclosed in the foregoing description, or the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately or in any combination of such features, be

utilised for realising the invention in diverse forms thereof.



**CLAIMS:**

1. A container for an article, the container comprising two casing parts relatively movable between a closed position wherein the parts encase the article, and an open position wherein the parts permit access to the article, one of the parts having resilient gripping means adapted to grip an article placed in the container, and the other of the parts having pressure means adapted to press against the gripping means, so as to maintain the gripping means in an article gripping position thereof, during the period when the container is closed.

2. A container according to Claim 1 wherein the gripping means comprises resilient upstanding gripping formations on said one of the casing parts.

3. A container according to Claim 2 wherein the pressure means comprises upstanding protrusions on said other of the casing parts which, when the container is closed, maintain the gripping formations in their article gripping positions.

4. A container according to any one of Claims 1 to 3 wherein said casing parts are moulded in one piece from plastics material and are joined by an integrally formed "crease hinge".

5. A container according to Claim 4 wherein said plastics material is polypropylene.

6. A container according to any of Claims 1 to 5 provided with peripheral clip formations which snap

releasably into engagement so as to encase the article in "clam shell" manner.

7. A container according to any one of Claims 1 to 6 provided with tabs which may be urged in opposite directions to open the container.

8. A container according to any one of the Claims 1 to 7 being a container for a compact disc.

9. A container substantially as hereinbefore described with reference to and/or as illustrated in the accompanying drawings.

10. Any novel feature or novel combination of features described herein and/or illustrated in the accompanying drawings.